IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 2151   Examiner: Patel, Dhairya A.

Serial No.: 09/910,680   Filed: July 20, 2001

In re Application of: Schrempp et al.

For: PLAYLIST GENERATION METHOD AND APPARATUS

AMENDMENT

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the final Office Action dated March 23, 2006, kindly amend the above-identified application as follows.

In the specification:

Please amend the paragraph starting at page 17, line 14 as follows:

In some embodiments of this invention the received data may be divided into segments. For purposes of this discussion, a segment is an arbitrary portion of the data of the unknown work of a predetermined length. It is contemplated that the ID server may examine the representations of all segments that were not identified in the process described above, and determine that some sub-segments were actually performances of a single work. OOOOOOFurthermore, this examination may extract a plurality of other characteristics of the original broadcast such as the amount of musical content, amount of speech content, a transcription based on speech recognition, the beat of any music present etc. These characteristics of the un-identified segments can then be used to classify the un-identified unknown representations. For instance, a sub-segment that has been performed many times may be correlated with a high amount of musical content and a certain minimum length of play time to indicate that a new song has been detected. Correlating other values and characteristics could indicate that a new advertisement has been detected. In some cases a corresponding segment of the original broadcast signal could be retrieved and played for a human to perform an identification.

AMENDMENTS TO THE CLAIMS

In the claims:

1.   (Previously Presented) A playlist generation system comprising:

at least one analysis module for receiving signals that include data wherein said data includes an arbitrary portion of data of an unknown work, analyzing said data, generating a representation of said data including said arbitrary portion of data of said unknown work, and transmitting said representation over a network to an identification server;

at least one identification (ID) server for receiving said representation over said network from said at least one analysis module and determining the identity of said unknown work from said representation.

2.   (Previously Presented) The system of claim 1, wherein said at least one analysis module further includes an input port configured to receive said signals from a networked source.

3.   (Previously Presented) The system of claim 1, wherein said at least one analysis module further includes an input port configured to receive said signals from a broadcast source.

4.   (Previously Presented) The system of claim 1, wherein said at least one analysis module further includes an input port configured to receive said data in the form of a pre-broadcast digital form.

5.   (Cancelled)

6.   (Previously Presented) The system of claim 1, wherein said network comprises the Internet.

7.   (Previously Presented) The system of claim 1, wherein said representation comprises feature vectors.

8.   (Previously Presented) The system of claim 1, wherein said representation comprises a spectral representation of said data.

9.   (Previously Presented) The system of claim 1, wherein said representation comprises the text output of a speech recognition system.

10. (Previously Presented) The system of claim 1, wherein said representation comprises the musical score output of a music transcription system.

11. (Previously Presented) The system of claim 1, wherein said representation comprises a bit calculated key.

12. (Original) The system of claim 1, wherein said ID server is configured to identify said unknown work using feature vectors.

13. (Previously Presented) The system of claim 1, wherein said representation includes a spectral representation of said ID server is configured to identify said unknown work using said spectral representation of said unknown work.

14. (Original) The system of claim 1, wherein said ID server is configured to identify said unknown work using the text output of a speech recognition system.

15. (Original) The system of claim 1, wherein said ID server is configured to identify said unknown work using the musical score output of a music transcription system.

16. (Original) The system of claim 1, wherein said ID server is configured to identify said unknown work using a bit calculated key.

17. (Original) The system of claim 1, wherein said at least one analysis modules are further configured to receive a plurality of streaming sources for analysis at a single location.

18. (Original) The system of claim 1, wherein said at least one analysis modules are further configured to receive a plurality of streaming sources for analysis at a plurality of different access points of the network.

19. (Original) The system of claim 1, wherein said at least one analysis module is configured to provide said representations to said at least one ID server at a predetermined time interval.

20. (Original) The system of claim 19, wherein said predetermined time interval comprises at least once a day.

21. (Original) The system of claim 19, wherein said predetermined time interval comprises approximately once an hour.

22.   (Previously Presented) The system of claim 19, wherein said at least one analysis module is configured to provide said representation to said at least one ID server responsive to receiving said signals and generating said representation.

23.   (Previously Presented) The system of claim 19, wherein said at least one analysis module is configured to provide said representation to said at least one ID server based on an out-of-band event.

24.   (Previously Presented) The system of claim 1, wherein said ID server is further configured to generate a playlist of identified works including said identification of said unknown work determined from said representation.

25.   (Previously Presented) The system of claim 1, wherein said ID server is further configured to generate a playlist of identified works of each said representation received from each at least one analysis module connected to the network responsive to identification of each said unknown work from each said representation.

26.   (Previously Presented) The system of claim 1, wherein said at least one ID server is further configured to provide an identification of said unknown work back to said at least one analysis module that transmitted said representation.

27.   (Previously Presented) The system of claim 18, wherein said ID server is further configured to update a playlist of identified works with an identification of said work of said representation responsive to identifying a representation.

28.   (Previously Presented) The system of claim 27, wherein said at least one ID server is further configured to provide an identification of said unknown work back to said at least one analysis module that transmitted said representation responsive to identification of said unknown work from said representation.

29.   (Previously Presented) The system of claim 27, wherein said at least one analysis module is further configured to purge said representation responsive to said identification is received.

30.   (Cancelled)

31.   (Previously Presented) A method for automatically generating a playlist comprising:

        receiving, by at least one analysis module, data including an arbitrary portion of data of an unknown work;

generating, by said at least one analysis module, a representation of said data including said arbitrary portion of data of said unknown work; and

sending, by said at least one analysis module, said representation to at least one identification server over a network.

32.   (Original) The method of claim 31, further comprising the act of identifying, by said identification server, said unknown work based upon said representation.

33.   (Original) The method of claim 32, further comprising the act of storing said identification in a playlist database.

34.   (Original) The method of claim 32, further comprising the act of sending, by said identification server, said identification to said at least one analysis module.

35.   (Original) The method of claim 34, further comprising the act of purging, by said at least one analysis module, at least one file corresponding stored to said identification.

36.   (Cancelled)

37.   (Previously Presented) The method of claim 31, wherein said network is the Internet.

38.   (Previously Presented) The method of claim 31, wherein said act of generating said representation comprises generating feature vectors of said data.

39.   (Previously Presented) The method of claim 31, wherein said act of generating said representation comprises a spectral representation of said data.

40.   (Previously Presented) The method of claim 31, wherein said act of generating said representation comprises the text output of said unknown work from a speech recognition system.

41.   (Original) The method of claim 31, wherein said representation comprises musical score output of a music transcription system.

42.   (Previously Presented) The method of claim 31, wherein said representation comprises a bit calculated key of the unknown work.

43.   (Previously Presented) The method of claim 32, wherein said act of identifying is performed using feature vectors in said representation.

44.   (Previously Presented) The method of claim 32, wherein said act of identifying is performed using a spectral representation of said data.

45.   (Previously Presented) The method of claim 32, wherein said act of identifying is performed using the text output of said data from a speech recognition system.

46.   (Original) The method of claim 32, wherein said act of identifying is performed using the musical score output of a music transcription system.

47.   (Previously Presented) The method of claim 31, wherein said act of identifying is performed using a bit calculated key of the data.

48.   (Previously Presented) The method of claim 31, wherein said act of receiving, by at least one analysis module, data includes receiving a plurality of streaming sources for analysis at a single location.

49. (Previously Presented) The method of claim 31, wherein said act of receiving, by at least one analysis module, said data includes receiving a plurality of streaming sources for analysis at different access points of the network.

50. (Previously Presented) The method of claim 31, wherein said act of sending, by said at least one analysis module, said representation to at least one identification server is performed responsive to generating said representation.

51. (Previously Presented) A method for automatically generating a playlist comprising:

> receiving a representation of data including an arbitrary portion of data of an unknown work over a network;
>
> identifying said unknown work using said representation; and
>
> updating a playlist with an identification of said representation.

52. (Previously Presented) A playlist generation system comprising:

> means for receiving data including an arbitrary portion of data for an unknown work over a network;
>
> means for generating a representation of data including said arbitrary portion data of said unknown work; and

means for sending said representation to at least one identification server over a network.

53.   (Previously Presented) The system of claim 52, further including means for identifying said unknown work based upon said representation in said at least one identification server.

54.   (Original) The system of claim 53, further including means for storing said identification in a playlist database.

55.   (Previously Presented) The system of claim 54, further including means for sending said identification from said at least one identification server to said at least one analysis module over said network.

56.   (Previously Presented) The system of claim 52, further including means for generate a playlist of identified works from each said representation received from each said at least one analysis module in the network responsive to identification of a work from each said representation.

57.   (Previously Presented) The system of claim 52, further including means for updating a playlist of identified works responsive to identification of a work from each said representation.

58.   (Previously Presented) The system of claim 52, further including means for providing an identification of said unknown work back to the at least one analysis module responsive to identification of said work from said representation.

59.   (Previously Presented) A playlist generation system comprising:

    means for receiving data including an arbitrary portion of data of an unknown work;

    means for generating a representation of said data including said arbitrary portion data of said unknown work;

    means for sending said representation to at least one identification server over a network; and

    means for sending an identification of said representation to at least one other computer system over said network.

REMARKS

In an Office Action dated 23 March 2006, the Examiner rejects 1-4, 6-29, 31-35, and 37-59 (all pending claims) and objects to the specification. In response to the Office Action, Applicants amend the specification. Applicants further traverse the rejections. Claims 1-4, 6-29, 31-35, and 37-59 remain in the Application. In light of the amendments and the following arguments, Applicants respectfully request that the Examiner allow the pending claims and the Application.

Applicants have amended the specification to indicate that a segment is an arbitrary of the data of an unknown work. No new matter has been added to the disclosure by this amendment as the amendment is merely clarifying the definition of segment as segment was used in the disclosure.

The Examiner rejects claim 1 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent 4,230,990 issued to Lert Jr. et al. (Lert). To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). The **test for anticipation** is symmetrical to the test for infringement and has been stated as: "That which would literally infringe [a claim] if later in time anticipates if earlier than the date of invention." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); *Connell v. Sears Roebuck & Co.*, 722 F.2d 1542, 1548, 220 U.S.P.Q. 1931, 1938 (Fed. Cir. 1983). The Examiner has not provided a reference, Lert, that teaches each and every limitation of claim 1.

Applicants maintain that Lert does not teach using an arbitrary potion to generate a representation. Instead, Lert teaches recording a predetermined amount of data after a cue signal is detected. Thus, in order to pattern match Lert must have a predetermined portion of the data of a work. Whereas, the present invention may determine the broadcast of a work from any portion of the data of the unknown work. Thus, claim 1 is not taught in Lert and the following arguments are restated for the Examiner's consideration.

Claim 1 recites "at least one analysis module for receiving signals that include data wherein said data includes an arbitrary portion of data for an unknown work, analyzing said data, generating a representation of said data including said arbitrary portion data of said unknown work, and transmitting said representation over a network to an identification server and at least one identification server for receiving said representation from said at least one analysis module, and determining the identity of said work from said representation." Lert does not teach these limitations. Instead, Lert teaches a system for identifying broadcast works, such as television programs. Lert uses the received signals to identify a broadcast by pattern matching. In order to pattern match, a received work with a known work Lert uses a trigger or cue signal to indicate the beginning of the program. See Abstract. See also col. 6, lines 18-23. The trigger indicates a segment of data of the broadcast at a predetermined location in data of the work to compare to a comparable segment for the reference work. See col. 6, lines 27-31. Thus, Lert uses a specified portion (i.e. the data recorded after receiving the cue signals) to determine the identity of the work. The present invention does not need a trigger signal instead the present invention generates a representation of any portion of data for the work received and can pattern match the representations of a portion of the data of an unknown work with the representations of portions of the known works to

determine the identity of the unknown work. The Lert system only works if a specific point of the work is identified to extract the data that can be matched to stored information. Claim 1 is an improvement over Lert as the system of claim 1 does not need to identify the start of a predetermined portion of the data of work to perform identification. Thus, Applicants respectfully request that the rejection of claim 1 be removed and claim 1 be allowed.

Claims 2-4 and 6-29 are dependent upon claim 1. Thus, claims 2-4 and 6-29 are allowable for at least the same reasons as claim 1. Therefore, Applicants respectfully request that the rejections of claims 2-4 and 6-29 be removed and claims 2-4 and 6-29 be allowed.

Claim 31 recites a method performed by an analysis module including the step of generating the representation from received data as recited in claim 1. Thus, claim 31 is allowable for at least the same reason as claim 1 as it includes the step of generating the representation from the received that is not disclosed in Lert. Therefore, Applicants request the rejection of claim 31 be removed and claim 31 be allowed.

Claims 32-35 and 37-50 are dependent upon claim 31. Thus, claims 32-35 and 37-50 are allowable for at least the same reasons as claim 1. Therefore, Applicants respectfully request that the rejections of claims 32-35 and 37-50 be removed and claims 32-35 and 37-50 be allowed.

Claim 52 recites an apparatus for receiving data including data for a work, generating a representation from the data, and transmitting the representation over a network. Thus, claim 52 is allowable over Lert for at least the same reasons as claim 1.

Therefore, Applicants respectfully request that the rejection of claim 52 be removed and claim 52 be allowed.

Claims 53-58 are dependent upon claim 52. Thus, claims 53-58 are allowable for at least the same reasons as claim 52. Therefore, Applicants respectfully request that the rejections of claims 53-58 be removed and claims 53-58 be allowed.

Claim 59 recites an apparatus that performs the method of claim 51. Thus, claim 59 is allowable for at least the same reasons as claim 51. Therefore, Applicants respectfully request that the rejection of claim 59 be removed and claim 59 be allowed.

The Examiner rejects claims 51 under 35 U.S.C. §103(a) as being unpatentable over Lert in view of U.S Patent Number 6,026,439 issued to Chowdhury et al. (Chowdhury). In order to maintain a rejection the Examiner has the burden of providing evidence of prima facie obviousness. See MPEP §2143. See also In Re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). In order to prove prima facie obviousness, the Examiner must provide evidence in the prior art of a motivation to combine or modify a reference, a reasonable expectation of success, and a teaching of each and every claimed element. Id.

Claim 51 recites receiving a representation of data including an arbitrary portion of data of an unknown work over a network, identifying said unknown work using said representation, and updating a playlist with an identification of said representation. Lert does not teach these limitations. Instead, Lert teaches a system for identifying broadcast works, such as television programs. Lert uses the received signals to identify a broadcast by pattern matching. In order to pattern match, a received work with a known work Lert uses a trigger signal to indicate the beginning of the program. See Abstract. See also col. 6, lines 18-23. The trigger indicates a segment at a predetermined

location in data of the work to compare to a comparable segment for the reference. See col. 6, lines 27-31. Thus, Lert needs a specified portion of the data of a work to identify the work. The present invention does not need a trigger signal instead the present invention generates a representation of the portion of data for the work received and can pattern match portions of the representations of portions of the known works to determine the identity of the unknown work. The Lert system only works if a specific point of the work is identified to extract the data that can be matched to stored information. Claim 51 generates a representation of all data received and then identifies the work from that representation. Claim 51 does not need to know the beginning of the data for an unknown work like is required in Lert. Thus, Lert does not teach the generating of the representation of data claimed in claim 51 and identifying the work from the representation claimed.

Chowdhury also does not teach these limitations. Instead Chowdhury teaches a system in which the data for the work is known. Thus, Chowdhury does not teach these limitations. Since neither Lert nor Chowdhury teach the limitations of claim 51, Applicants respectfully request that the rejection of claim 51 be removed and claim 51 be allowed.

If the Examiner as any questions regarding this response or the application in general, the Examiner is invited to contact the undersigned at 775-586-9500.

Respectfully submitted,
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Dated: May 23, 2006

/william p. wilbar/

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